

Patent Application of

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A SYSTEM AND METHOD FOR NON-PROGRAMMERS TO DYNAMICALLY MANAGE  
MULTIPLE SETS OF XML DOCUMENT DATA

BACKGROUND OF THE INVENTION

FIELD OF THE INVENTION

The present invention relates generally to systems and methods for interfacing with and using Extensible Markup Language (XML) documents. Still more particularly, the present invention relates to systems and methods that allow the non-programmer to easily modify the display format, functions, and filters operating upon data extracted from XML documents.

DESCRIPTION OF THE RELATED ART

Companies use XML documents to publish various types of information for use by customers and partners. The type of information in such XML documents is frequently common transactions such as invoices and purchase orders and common reference documents such as customer profiles and price lists. Computer programmers design these XML document formats in a technical manner. People and programs that extract data from corporate databases typically create the XML documents containing actual data.

While XML formats are convenient for the company that creates them, the partners of that company may find them incompatible with their own XML formats, relational database schema, and message formats and therefore difficult to work with. In many cases, the user is forced to have programmer create a program to merge, filter and transform XML documents into the format they want. Thus, XML documents are very difficult for the businessperson or non-technical user to operate. Therefore, there is a need for a system that both allows the user to view and update XML

documents in different formats, and allows the user to manipulate the data and perform actions without programming skills.

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## SUMMARY OF THE INVENTION

The present invention overcomes the limitations and shortcomings of the prior art with a system and methods for dynamically retrieving, manipulating, updating, creating, and displaying data from sources of Extensible Markup Language (XML) documents comprises a central processing unit, an input device, a program memory, a display device, mass storage, and a network. The program memory comprises system-user entered data definitions and business rules. The system imports XML document data into the system data definitions, processes the data using the business rules definitions and exports XML documents. The system can automatically create XML document formats from its data definitions and can automatically create its data definitions from XML document formats; the system-user can also define the mapping between XML document formats and the system data definitions.

The system has three major data types: primary record types (PRTs), management record types (MRT), and dynamic documents (DD). A PRT is similar to relational database table; they contain most of the data. A MRT is a grouping of PRTs; they contain pointers to individual PRT records and some calculated data. A DD is a restructuring of a set of MRT instances for analysis and presentation; they contain pointers to the MRT components and some calculated data. The system's data structure is much more sophisticated than that of a relational database or a set of XML documents. Unlike a relational database, the business rules can use the complex data relationships of the MRTs and DDs, and system-users can easily define views of the data that do not conform to the constraints of the relational data model. Unlike a set of XML documents, the system-user can easily merge data from multiple XML document formats. Also the system stores only one instance of duplicate XML components; manipulating the one instance automatically affects all XML documents that include that instance.